

*Sub
a1*

WHAT IS CLAIMED IS:

1. A corneal surgery apparatus for correcting a refractive error by ablating corneal tissue with a laser beam comprising:

(a) input means for inputting refractive power data on a contact lens used on a trial basis;

(b) calculation means for converting the inputted refractive power data to obtain ablation data; and

or (c) control means for controlling an ablation amount of the corneal tissue based on the obtained ablation data.

2. A corneal surgery apparatus according to claim 1, further comprising storage means for storing the refractive power data in correspondence with each contact lens,

wherein the input means comprises means for inputting an identifier assigned to the contact lens and means for retrieving the refractive power data stored in the storage means with reference to the inputted identifier.

3. A corneal surgery apparatus according to claim 1, further comprising revising means for revising the inputted refractive power data on the contact lens,

wherein the calculation means obtain the ablation data based on the revised data.

4. A corneal surgery apparatus according to claim 1, wherein:

the contact lens includes a contact lens for

presbyopic correction; and

the refractive power data includes data on a far vision zone, a refractive power on the far vision zone, a near vision zone, and a refractive power on the near vision zone.

5. A corneal surgery apparatus according to claim 4, further comprising display means for graphically displaying the inputted data on the far vision zone and the near vision zone.

6. A correction data determining method of correcting a refractive error by ablating corneal tissue comprising:

(a) a process in which a value of correction to be made with a contact lens is obtained based on a result of an ophthalmic examination;

(b) a process in which a contact lens for trial use is selected based on the obtained value of correction; and

(c) a process in which refractive power data of the selected contact lens are converted into ablation data for correcting the refractive error if the trial use of the contact lens bears a good result.

7. A correction data determining method according to claim 6, wherein the contact lens includes a lens geared for a correction pattern in which ablation is carried out with a corneal surgery apparatus for ablating corneal tissue.

8. A corneal surgery apparatus for correcting a refractive error by ablating corneal tissue with a laser beam comprising:

(a) an ablation unit which comprises a laser light source emitting a laser beam and an irradiation optical system for irradiating the emitted laser beam onto a cornea;

(b) an input unit which inputs refractive power data of a contact lens used on a trial basis;

(c) a calculation unit which converts the inputted refractive power data to obtain ablation data; and

(d) a control unit which controls the ablation unit based on the obtained ablation data.

9. A corneal surgery apparatus according to claim 8, wherein the irradiation optical system includes a circular aperture of which opening diameter is changeable, a projecting lens which projects the aperture onto the cornea, a shifting unit which displaces² a region to be irradiated with the laser beam from a center of an optical zone on the cornea, and a rotator³ which rotates the laser beam.

10. A corneal surgery apparatus according to claim 9, wherein the irradiation optical system includes a beam restricting unit insertable in and removable from an optical path of the laser beam, the beam restricting unit having a semi-oval aperture which is tilted to a variable angle with respect to an optical axis of the irradiation

optical system.

add a

TOP SECRET